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# THE MUNICIPALIZATION of the MILK SUPPLY.

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MUCH attention has lately been given to the improvement of the milk supply, but the importance of the subject and the evils which exist under the present conditions are not yet sufficiently realized by the public. Dr. Ernest Hart, the late editor of the *British Medical Journal*, who carefully studied milk in relation to the spread of disease, says, "the story is sufficiently sad and deplorable. It is one that reflects little credit on our boasted sanitary advancement. We must not forget . . . that to children and invalids it is a matter of great moment that our milk service shall be free from any quality likely to prove injurious. . . . The fact remains that, treat it as we will, there is

## DEATH IN THE MILK PAIL."

It is now time to consider whether it is safe to allow the milk supply to remain as a source of profit in the hands of private individuals. Milk is by far the most important article of food for children, and it is essential that it should be pure. The physique of adults largely depends on the food consumed in early life, and, owing to the growth of the practice of artificial feeding, cows' milk is, unfortunately, every year more largely used as a food for young infants.

It is a remarkable fact that while our general death-rate is steadily decreasing, the infant mortality has of late years shown a tendency to increase. This is brought out by the following table, compiled from the Reports of the Registrar-General :

	General Death-rate per 1,000 living.	Infant Mortality per 1,000 births.
Decennium 1881-90	19.1	142
Year 1891	20.2	149
" 1892	19	148
" 1893	19.1	159
" 1894	16.5	137
" 1895	18.7	161
" 1896	17	148
" 1897	17.4	156
" 1898	17.5	160
" 1899	18.2	163
" 1900	18.2	154
Decennium 1891-1900	18.2	154
Year 1901	16.9	151

The improved sanitary conditions which have brought about the reduction of the general death-rate must have influenced infant life, and, therefore, some counteracting cause must be operating to account for the increase in infant mortality. It is probably to be found in the increased consumption of unwholesome cows' milk ; for the mortality is far greater in artificially-fed infants than in those fed in the natural manner. Professor Kehrer, of Munich, has shown

that, in Munich at all events, over 85 per cent. of the deaths in the first six months occur amongst artificially-fed children.

Milk is a medium in which the germs of disease multiply rapidly, and it plays an important part as a carrier of the infection of typhoid fever, scarlet fever, diphtheria, and cholera. In the years 1881-1896 Dr. Ernest Hart recorded 95 outbreaks of zymotic disease in this country as having been traced to the agency of milk. Of these, 48 were of typhoid fever, 32 of scarlet fever, and 15 of diphtheria. He states, also, that these "but touch the fringe of the matter." Outbreaks of milk-borne zymotic disease are more frequent than official reports indicate, owing to the tendency of interested persons to hush up unpleasant facts. Summer diarrhœa, that terrible scourge of infant life, is mainly caused by the consumption of impure cows' milk.

Tuberculosis, especially of the digestive organs, is largely spread by milk. The death-rate from tuberculosis of the lungs (consumption) in children under five years has diminished 66 per cent. during the last forty-five years. But intestinal tuberculosis, "consumption of the bowels," at the same age period has only diminished by 3 per cent., while the rate for infants under one year has actually increased 27 per cent. This disease is largely due to the use of milk contaminated by the tubercle bacillus. Considerably more than 25 per cent. of the milch cows in this country suffer from tubercular disease, which has been proved to be due to conditions that can be prevented. Cows become tubercular when they are deprived of fresh air and crowded together in dirty, badly-ventilated sheds. In Jersey and Finland, where the cows live entirely in the open air, tuberculosis is almost unknown, but the animals acquire the disease readily enough when they are brought to this country and installed in our cowsheds. The cowkeepers huddle the animals together because they find that the higher temperature in the shed so obtained causes the animals to give more milk.

Tuberculosis killed over 60,000 persons last year in England and Wales. It is safe to predict that the organized attempt now being made to stamp out the disease will fail while the present conditions of the milk supply remain unchanged.

#### ADULTERATION.

Milk is of all food-stuffs the one most frequently adulterated. According to the Annual Report of the Local Government Board for 1900-01, out of 23,223 samples of milk analysed in England during 1900, 2,497 or 10·8 per cent. were found to be adulterated. This may seem an unexpectedly satisfactory result; but the Report states that "it is more than probable that this does not represent the full extent of milk adulteration in England, for a low standard is adopted so that injustice may not be inflicted on the vendors of poor but genuine milk. The adoption of so low a standard affords an opportunity to unscrupulous traders to add to their milk a considerable quantity of water or of 'separated' milk from which every particle of fat has been extracted by machinery." Adulteration usually takes the form of adding water or abstracting cream. In either case, the nutritive value of the milk

is seriously impaired. This form of adulteration is detected by estimating the quantity of fat present. The average amount of fat in cow's milk is equal to 4 per cent. (Prof. Veith), but the limit fixed by the Board of Agriculture is only 3 per cent. ! A wide margin is therefore left for adulteration.

One of the worst forms of adulteration consists in adding poisonous drugs to "preserve" the milk. Boric acid, salicylic acid and formalin are those usually employed. This practice is common and is increasing, though it is absolutely unnecessary if milk is kept under proper conditions. There can be no question as to the harmful effect of these drugs, and the Departmental Committee on Food Preservatives recommended that their use in milk be made an offence against the law.

Adulteration is especially prevalent on Sunday mornings. The sanitary officials are not expected on Sunday, and an exceptional demand is created by the indulgence in extra milk on the part of the poorer classes. In Clerkenwell, during the months May, June, July, 1896,  $47\frac{1}{2}$  per cent. of milk samples taken on Sunday mornings were found to be adulterated. One sample was certified as skimmed to the extent of 90 per cent. and also to have had 23 per cent. of water added. Magistrates deal lightly with milk adulteration. The Local Government Board Report states : "It has been represented to us by many local authorities that the inadequate fines inflicted by magistrates are an encouragement to adulteration."

Condensed separated milk (the word "separated" being printed in very small letters on the label) is coming extensively into use for the children of the poor. It is destitute of fat, and its use, as a substitute for genuine milk, has given rise to a large mortality from wasting diseases. Professor Corfield has traced an outbreak of scarlet fever to a tin of condensed milk.

#### HOW CAN THE MILK SUPPLY BE IMPROVED?

Some Public Health officials believe it can be done by a vigilant inspection and supervision of the milk trade by the local authorities. The Dairies, Cowsheds and Milk Shops Order of 1885 throws upon every sanitary authority the duty of supervising the milk trade in its district. It makes some provision for the proper keeping of cowsheds, dairies and milk shops, provides against keeping swine in a cowshed, and prohibits any person suffering from infectious disease, or having recently been in contact with a person so suffering, from taking part in the production, distribution, or storage of milk. These provisions, if generally enforced, would no doubt improve our milk supply to a certain extent. Many urban authorities have enforced them with some success. But by far the greater portion of our milk comes from the country, where the Rural District Councils hold sway. These bodies have done practically nothing to enforce the law with regard to milk. This is not to be wondered at, as they are largely composed of farmers who may be relied upon not to impose restrictions on their own trade. Realizing the hopelessness of looking for reform in this direction, most provincial towns have obtained powers to inspect any dairy or cowshed wherever situated from which milk is being supplied within their jurisdiction, and to

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take steps to prevent tubercular milk being supplied within the district therefrom. The Bills containing these provisions gave rise to a storm of opposition from the farmers in the surrounding districts and had to be considerably modified before becoming law. It is quite certain that no measures of inspection will be found adequate to combat the existing evils. All sanitarians are agreed that inspection of private slaughter-houses cannot protect us from bad meat, and the public slaughter-house is necessary. The public milk shop is still more necessary.

The remedy is to

#### MUNICIPALIZE THE MILK SUPPLY.

If we want good milk let us establish our own dairy farms in the country and our milk stores in the city. Many of our large towns have spent enormous sums of money to provide their citizens with water: why should they not also provide them with milk? The arguments in favor of municipal water apply with greater force to municipal milk. We want municipal dairy farms in the country, managed by dairy experts, and supervised by medical officers and veterinary inspectors. We want carefully selected, healthy cows to give us milk; and we want them kept under proper conditions. On our municipal dairy farms we could see that these conditions were fulfilled. A municipality would have no interest in adding dirty water to milk to make two gallons look like three. Milk municipalization would be a comparatively simple business. No powerful companies would have to be bought, and no question of compensation for loss of licence could arise. Milk production does not require the use of complicated and costly machinery. The milk trade pays well, and its concentration would give rise to an increased economy in working. We should get cheaper as well as better milk. On the municipal farms we could insist that the laborers were paid a fair rate of wages. Much could be done in this way to improve the condition of the agricultural laborer, and thus to check the rush to the towns. Several municipalities are already engaged in the milk trade. Nottingham, for instance, keeps 100 milch cows and supplies milk to its own hospitals. The right way is to begin with public institutions. But we shall have to go much further when the public realizes the extent to which cruelty, dishonesty, disease and death are involved in the present method of the milk supply.

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